

Teacher's Guide



Hopewell Furnace in 1836 *A Visualization Activity*

These descriptive paragraphs can be read to students in the classroom to prepare for their visit to Hopewell Furnace National Historic Site or can be read while at the site. Ask students to close their eyes and imagine work and life at historic Hopewell Furnace. It may be helpful to review vocabulary words before reading this activity to your students.

The year is 1836 and you are on your way to visit relatives at Hopewell Furnace. The dirt road is full of potholes and you bounce painfully on the wooden seats of the wagon. Your father is sitting beside you and he lets you hold the reins. The leather reins have been recently oiled and are sticky in your hands. It's a warm summer day and you feel the sun on your face. Flies buzz about your eyes and ears. The work horses swish their tails at the large flies trying to bite their hindquarters.

You are hungry and tired, but anxious to see your cousins. As you near Hopewell, the trees disappear and the smell of smoke and fire invades your nose. The winding road takes you through recently cut acres of forests. Several cords of wood are piled along the road. On the right, below the hill, a collier is tending a charcoal hearth. He waves to you with one hand, while in his other hand he holds a shovel. You watch as he shovels dirt on the huge mound to put out a small fire. You can see at least four other hearths burning below you. Your eyes tear and start to burn from all the smoke. You snap the reins and the horses gallop through the smoke. You breathe in big gulps of fresh air as the charcoal hearths are left behind.

The road straightens and passes through some young trees. This area was cut and cleared for charcoal some years ago. You can still see the circular scars on the ground where the charcoal pits were located. The trees, however, look healthy, and some weeds are beginning to grow over the black scars. An abandoned collier's hut dominates the top of a small hill to your left. The timbers that once stood erect have fallen in a heap. The pipe of an old stove sticks out from the debris.

As the wagon rounds the bend, you hear voices in the distance. You hear the rhythmic pounding of metal against stone... clink... clink... clink... You know you are at the Jones' Good Luck Mine and only a few miles

away from Hopewell Furnace. Here at the mine, the men are busily swinging their picks into the hard iron ore. The surface mine looks like a giant pit dug into the ground. Alongside your wagon a boy pushes a cart full of ore. He throws a piece of ore to you and you catch it. The heaviness of the rock surprises you. The ore is dark, but has rust-colored streaks of iron in it. Your father tells you not to keep the piece of iron ore, so you toss it back to the same boy.

As you look up into the clear sky you see a thin wisp of smoke in the distance ahead. You must be close to Hopewell Furnace! You stand up in the wagon and look down into a valley surrounded with gentle sloping hills. The hillsides are treeless from the work of woodcutters and the colliers. French Creek cuts through the middle of the village, meandering its way through the fields and cut forests. From this distance it hardly seems larger than a trickle. Tiny houses and buildings dot this valley. The buildings were once white but are now a dirty grey color. You can see many people around the buildings, in the field and in the gardens.

The smoke that you saw from the distance is billowing from the chimney of the furnace. There is a bad smell coming from the furnace stack. It smells something like rotten eggs. As you near the furnace, two men are pushing carts of iron ore, charcoal and another rock (this one is lighter in color) called limestone. The wheels of the carts squeak as they roll toward the top of the furnace. You can barely see into the brick building, but you watch as the men dump the ore, limestone and charcoal into the chimney. One man turns away from the intense roar of smoke, fire and heat. His skin is glistening with sweat from the heat of the furnace. You too can feel the heat of the furnace. The horses snort from fear. Your father leads them down the hill, past the office and store, past the Big House and around the bend past the barn.

Your father stops to talk to the blacksmith and you get out of the wagon. You stand in the doorway of the cast house. Over to the left men are pounding sand into wooden boxes. There are at least six of these moulders, plus their apprentices, working at benches. They are making molds for stove plates. Everywhere is dust, dirt and heat! The one cool spot is over by the waterwheel. The giant wheel lazily turns and water is occasionally splashed into the dusty room. All of a sudden a loud bell rings right above where you're standing! The clanging of the bell creates quite a stir of activity in the casting house. Men start appearing from all directions. One man, still munching on a dinner biscuit, brushes past you. The smell of the freshly baked bread reminds you of your hunger.

As you watch, a tall, muscular man with his sleeves rolled to his elbows picks up a long iron rod and walks toward the dam stone of the furnace. The moulders are bustling about and shouting as they stack their molds in a row and grab ladles and crucibles. There is excitement in the air. All the men become silent as the man with the rolled-up sleeves (you later learn that he is Tom Care, the founder) knocks out a clay plug from the top of the dam stone.

Red, hot liquid bursts out of the furnace. The liquid is so hot it bubbles as it is channeled into a pit on one side of the furnace. This is the slag. Then the man returns to the furnace and knocks a clay plug from the bottom of the dam stone. Now a purer liquid rushes from the furnace. This is the molten iron. Each man scoops this boiling liquid into his brace and ladle, returns to his work station, and carefully pours this molten iron into sand-cast molds. You smell burning sand; you see bubbling, molten metal; you hear the groaning of the waterwheel, roar of the furnace, and the heavy sighs of the men working; and you feel the excitement of this activity as the moulders and their apprentices hurry past you to do their important and dangerous jobs.

Your father calls your name and you slowly saunter back to the wagon, keeping your eyes on the furnace and all of its activity. The horses plod past the blacksmith shop, across the French Creek bridge and toward the employee tenant houses. Clothes are drying on a line. A large, black kettle is hanging over an outside fire. Two girls are sitting in the shade of a sycamore tree churning milk into butter. In a large garden, one woman and two small children are pulling weeds. The children are covered with dirt and laugh as they throw weeds first at each other and then into a pile. A few chickens are following the young gardeners, scratching the dirt and picking through the weeds. As the woman slowly stands and straightens her back, smoothing her skirt and apron, she shields her eyes from the sun and looks toward your approaching wagon. A smile spreads across her sunburned face and she waves heartily to you and your father. You recognize your aunt and you jump off the wagon and race toward your young cousins.

Soon you are all sitting on the grass munching on freshly baked bread and freshly churned butter. As the buttered biscuit melts in your mouth you feel how lucky your cousins are to live here. Even though smoke is billowing from the furnace, the air smells of rotten eggs, and flies and wasps buzz about your head, the garden dirt feels good on your bare feet, the sun feels good on your upturned face and you are happy to be at Hopewell Furnace.